PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of			
ECCLES, Anthony Philip		Examiner:	John P. Sheehan
Serial No.:	08/637,802	Art Unit:	1742
Filed:	May 8, 1996		
For:	SILVER ALLOY COMPOSITIONS		

Attorney Docker No.: C-35469

DECLARATION UNDER RULE 132

Hon. Commissioner of
Patents and Trademarks
Washington, D.C. 20231

November 25, 1998

I, Melvin Bernhard established United Precious Metal Refining Co. Inc., (United Precious Metal) in 10 June 1997 and incorporated United Precious Metal in 1988. I am the Vice President, have been in charge of Research and Development since 2 February 1988, and I am an inventor for the two U.S. Patents granted for silver copper alloys owned by United Precious Metal as discussed below. I have been in the employ of United Precious Metal since 2 February 1988 and in the present capacity as an Officer and Director since 2 February 1988.

United Precious Metal is a major manufacturer of jewelry grade alloys and is an innovative developer of new metallic alloys. United Precious Metal has been granted two U.S. Patents for silver alloy compositions, U.S. Patent No. 4,973,446 to Bernhard et al. in 1990 and U.S. Patent No. 5,039,479 to Bernhard et al. in 1991.

United Precious Metal is the licensee of the above referenced patent application that was assigned to Apecs Investment Castings Pty. Ltd. (Apecs). United Precious Metal is presently using the claimed invention to manufacture Silver Copper Alloy Compositions comprising at least 86% silver by weight, 0.5 – 5.5% copper by weight, 0.07 – 6% mixture of zinc and silicon by weight, wherein the silicon is in the range of 0.2 – 2% by weight, and 0.01 –2.5% germanium by weight. United Precious Metal began selling the Silver Alloy Compositions of the claimed invention in 1995, the first year of the license of the above patent application, and continues to manufacture and sell the alloys of the claimed invention under the brand names "Sterling Ag #57and #97". The silver alloys of the claimed invention have enjoyed a wide degree of acceptability for their desirable silver color, overall appearance, firescale resistance, and sufficient work hardenability for practical jewelry making and other fine silver applications.

Support

I am familiar with the above referenced patent application, as well as with the development, usage and properties of silver copper alloys for use in the manufacture of jewelry and other fine silver applications.

BACKGROUND INFORMATION

To the best of my recollection, sterling silver, near sterling silver, and other high silver concentration alloys have been commercially manufactured for the jewelry, houseware and minting industries for centuries, and have been available on a wide scale at least since the beginning of this century. Many new compositions of these high silver content alloys have been manufactured over the years in order to

fulfil particular needs. Fire scale resistant silver alloys first appeared in the industry in 1970. Elements such as nickel, cadmium, zinc, and silicon have been used over the years, and some are still used today, as additives to silver rich silver copper alloys in order to improve the fire scale resistance of the alloys which will undergo heat treatment during post melt processes, as required during jewelry making etc.

United Precious Metal owns two U.S. patents as discussed above, which have advanced the company's manufacture and sale of its sterling silver alloy compositions. The '446 and '479 patents reach jewelry grade and other high silver content silver alloy compositions exhibiting increased fire scale resistance as is desirable for fine silver applications such as jewelry, housewares, flatware, and minting industries. The '446 and '479 Bernhard patents reach silver alloy compositions comprising a least 89% silver by weight 0.01 – 2% silicone by weight, 0.001 – 2% boron by weight, 0.5 – 5% zinc by weight, 0.5 – 6% copper by weight, 0.25 – 6% tin by weight, and 0.01 – 1.25% indium by weight. The silver alloy compositions of the '446 and '479 patents have been seriously limited in their suitability for jewelry making however, because of their relatively soft consistency which is not hard enough for practical jewelry making.

United Precious Metal, as early as September 1990 fully appreciated that it had an interest and desire in developing a high-silver, low-copper, silver copper alloy, exhibiting superior fire scale resistance as well as a hardness akin to standard silver alloys used for jewelry making. Although United Precious Metal possessed the means and motivation to increase the work hardenability of its fire scale resistant

working on problem?

silver alloys of its '446 and '479 patents, United Precious Metal was unable on their own to find an acceptable way to increase the work hardenability of their high silver content, silver copper alloys.

LICENSE AGREEMENT BETWEEN UNITED PRECIOUS METAL AND APECS INVESTMENT CASTINGS PTY. LTD.

In early 1993, at the Santa Fe symposium, I attended a meeting with Anthony Philip Eccles of Apecs. I was familiar with Anthony Eccles' work in incorporating silicon additives to precious metals, and asked his assistance in reviewing the problems associated with increasing the work hardenability of our patented sterling silver alloys of the '446 and '479 patents.

Anthony Eccles developed a new silver alloy composition as disclosed in the claimed invention comprising at least 86% silver by weight, 0.5 –5.5% copper by weight, 0.07 – 6% mixture of zinc and silicone by weight, wherein the silicon is present in a range of 0.2 – 2% by weight; and 0.01 – 2.5% germanium by weight. This new silver alloy is referred to further in this declaration as the "Apecs Silver Alloy".

Anthony Eccles had discovered that by adding trace amounts of germanium to the high-silver, low-copper, silver copper alloy of the '479 patent, the germanium, as it is believed, would remain in solid solution during post melt hot processing thereby increasing the work hardenability of the alloy over other fire scale resistant silver alloys. This new Apecs silver alloy had the properties sought after by United Precious Metal and was capable of passing rigorous acceptance tests, including tests for appearance, fire stain resistance, work hardenability, and usefulness and

suitability for jewelry manufacturing.

United Precious Metal was delighted to be advised of the successful development of the present invention by Anthony Eccles of Apecs, and was sufficiently confident in the Apecs silver alloy, so that United Precious Metal entered into a license agreement with Apecs on 15 July 1994. Royalties and a down payment were made for this particular technology for the desirable Apecs silver alloy compositions now claimed in the present application.

COMMERCIAL SUCCESS

Since the introduction, through the Bernhard '446 patent in 1990, of a high-silver, low-copper, silver copper alloys exhibiting substantial firescale resistance, a silver alloy additionally exhibiting a hardness akin to standard jewelry alloys, without the use of unsafe or toxic compounds such as cadmium, did not exist. Thus, for a period of about three years, in a competitive market, there was a long-felt want and an unsupplied need for a high-silver, low-copper, silver copper alloy having superior fire scale resistance along with a work hardenability suitable for practical jewelry making.

In my opinion, the silver alloy of the claimed invention was not obvious in that, notwithstanding the great need for an improved silver alloy suitable for jewelry making as discussed above, and notwithstanding the quest for a solution to the problem, it was not until the inventor of this invention developed their successful silver alloy compositions that the practical applications of the firescale resistant, high-silver, low-copper, silver copper alloy of the '446 and '479 patens could be

realized.

In my opinion, commercial success has resulted from the claimed invention in that the claimed compositions result in a silver alloy exhibiting characteristics not duplicated by any other alloy known to me.

As such, the Apecs silver alloy of the claimed invention has been responsible for our increased sale of sterling silver alloys by at least 80% since 1995, the first full year under the license agreement. The Apecs silver alloy composition accounts for 62% of the sterling silver alloys sold by United Precious Metal thus far in 1998. This percentage is up from 36% of the total sterling silver alloys sold by United Precious Metal in 1995. The introduction of the Apecs silver alloy composition increased the hardness of the high-silver, low-copper, silver-copper alloys produced by United Precious Metal, and became the preferred metal of choice of United Precious customers.

In my opinion, the commercial success that we have enjoyed in the marketing of the Apecs silver alloy is primarily attributable to the quality of the product since no increase in advertising was conducted for the Apecs silver alloy, over the other silver alloys sold by United Precious Metal. The Apecs silver alloy, to the best of my knowledge, was advertised only in our product brochures along side our other high silver content silver copper alloys. For example, Sterling Ag #57 was marketed in the normal way we introduce any new alloy. There was one color ad in national magazines, which ran periodically. We did the same with our earlier Sterling Silvers.

In my opinion, the commercial success enjoyed by the Apecs silver alloy is an indication and should have relevancy as evidence, that the combination of elements in the silver alloy compositions of the claimed invention of the present

application are non-obvious.

Melvin Bernhard

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 USC 1001, and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Melvin Bernhard